

**SAF-B03-015**  
**Remaining Sites Confirmation**  
**Sampling-Soil**  
**FINAL DATA PACKAGE**

**E:MAIL RESULTS TO:**

Ella Feist

N/A  
INITIAL/DATE

Mike Stankovich

N/A  
INITIAL/DATE**MAIL COMPLETE COPY OF DATA PACKAGE TO:**

Ella Feist

H9-01

BZ  
INITIAL/DATE

Mike Stankovich

H9-02

BZ  
INITIAL/DATE

Bob Hynes

H0-18

BZ  
INITIAL/DATE

Jeanette Duncan

H9-02

BZ  
INITIAL/DATE

6/4/03

**COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE COVER SHEET)**

SDG

H2224

SAF-B03-015

Rad only    ☒ Chem only    Rad & Chem☒ Complete

Partial

**Sample Location/Waste Site: 600-181**

**RECEIVED**  
JUL 28 2003

**EDMC**



2 June 2003

Joan Kessner  
Bechtel-Hanford, Inc.  
3190 Washington Way  
MSIN H9-03  
Richland, WA 99352

**Subject: Contract No. 630  
Analytical Data Package**

Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

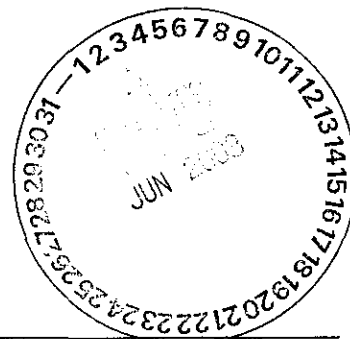
LvLI Batch #	0305L450
SDG #	H2224
SAF #	B03-015
Date Received	5-17-03
# Samples	4
Matrix	Soil
Volatiles	
Semivolatiles	X
Pest/PCB	X
DRO/KRO/GRO	
GC Alcohols	
Herbicides	X
Metals	X
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

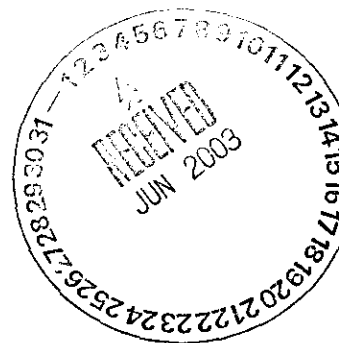
Sincerely,  
Lionville Laboratory Incorporated

  
Oriette S. Johnson  
Project Manager

r:\group\pm\oriette\tnu-hanford\data\b\_ltrs.doc



Lionville Laboratory, Inc.  
BNA ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD B03-015 H2224



DATE RECEIVED: 05/17/03

LVL LOT # :0305L450

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00NP0	001	S	03LE0624	05/14/03	05/23/03	05/26/03
J00NN7	002	S	03LE0624	05/14/03	05/23/03	05/27/03
J00NN8	003	S	03LE0624	05/14/03	05/23/03	05/27/03
J00NN9	004	S	03LE0624	05/15/03	05/23/03	05/26/03
J00NN9	004 MS	S	03LE0624	05/15/03	05/23/03	05/26/03
J00NN9	004 MSD	S	03LE0624	05/15/03	05/23/03	05/27/03

LAB QC:

SBLKUB	MB1	S	03LE0624	N/A	05/23/03	05/25/03
SBLKUB	MB1 BS	S	03LE0624	N/A	05/23/03	05/25/03



Client: TNU-HANFORD B03-015  
LVL #: 0305L450  
SDG/SAF # H2224/B03-015

W.O. #: 11343-606-001-9999-00  
Date Received: 05-17-2003

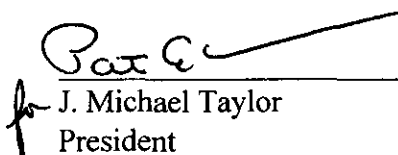
## SEMIVOLATILE

Four (4) soil samples were collected on 05-14,15-2003.

The samples and their associated QC samples were extracted according to Lionville Laboratory OPs based on method 3550 on 05-23-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 05-25,26,27-2003.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. Non-target compounds were detected in the samples.
4. Most samples required 2 to 20-fold dilution due to the nature of the sample matrix. The summary form does not reflect the correct dilution factor due to programming limitations. A copy of the Sample Extraction Record has been enclosed.
5. All surrogate recoveries were within EPA QC limits.
6. All matrix spike recoveries were within EPA QC limits.
7. All blank spike recoveries were within EPA QC limits.
8. The method blank contained the common laboratory contaminants Di-n-butylphthalate and Bis (2-Ethylhexyl) phthalate at levels less than the CRQL.
9. Internal standard area and retention time criteria were met.
10. Manual integrations are performed according to OP 21-06A-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
J. Michael Taylor  
President  
Lionville Laboratory Incorporated

05-29-03  
Date

son\group\data\tnu-hanford-0305-450.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 25 pages.

## GLOSSARY

### DATA QUALIFIERS

- U** = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J** = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I** = Interference.
- NQ** = Result qualitatively confirmed but not able to quantify.
- A** = Indicates that a TIC is a suspected aldol-condensation product.
- N** = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X** = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y** = Additional qualifiers used as required are explained in the case narrative.

## GLOSSARY

### ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

mmz\10-94\gloss.bna



## TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP - Missed Peak: manually added peak not found by automatic quan program.
- PA - Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

## Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 05/28/03 15:36

RFW Batch Number: 0305L450

Client: TNUHANFORD B03-015 H2224

Work Order: 11343606001

Page: 1a

Cust ID:		J00NP0	J00NN7	J00NN8	J00NN9	J00NN9	J00NN9
Sample RFW#:		001	002	003	004	004 MS	004 MSD
Information Matrix:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
D.F.:		1.00	40.0	20.0	2.00	2.00	2.00
Units:		ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Nitrobenzene-d5		81 %	69 %	70 %	84 %	69 %	85 %
Recovery 2-Fluorobiphenyl		74 %	80 %	79 %	82 %	67 %	82 %
Terphenyl-d14		96 %	103 %	99 %	107 %	90 %	108 %
Phenol-d5		75 %	69 %	72 %	85 %	70 %	82 %
2-Fluorophenol		72 %	74 %	75 %	85 %	70 %	84 %
2,4,6-Tribromophenol		73 %	48 %	52 %	78 %	67 %	84 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Phenol		330 U	28000 U	14000 U	760 U	70 %	81 %
bis(2-Chloroethyl)ether		330 U	28000 U	14000 U	760 U	760 U	760 U
2-Chlorophenol		330 U	28000 U	14000 U	760 U	68 %	79 %
1,3-Dichlorobenzene		330 U	28000 U	14000 U	760 U	760 U	760 U
1,4-Dichlorobenzene		330 U	28000 U	14000 U	760 U	66 %	79 %
1,2-Dichlorobenzene		330 U	28000 U	14000 U	760 U	760 U	760 U
2-Methylphenol		330 U	28000 U	14000 U	760 U	760 U	760 U
2,2'-oxybis(1-Chloropropane)		330 U	28000 U	14000 U	760 U	760 U	760 U
3- and/or 4-Methylphenol		330 U	28000 U	14000 U	760 U	760 U	760 U
N-Nitroso-di-n-propylamine		330 U	28000 U	14000 U	760 U	68 %	81 %
Hexachloroethane		330 U	28000 U	14000 U	760 U	760 U	760 U
Nitrobenzene		330 U	28000 U	14000 U	760 U	760 U	760 U
Isophorone		330 U	28000 U	14000 U	760 U	760 U	760 U
2-Nitrophenol		330 U	28000 U	14000 U	760 U	760 U	760 U
2,4-Dimethylphenol		330 U	28000 U	14000 U	760 U	760 U	760 U
bis(2-Chloroethoxy)methane		330 U	28000 U	14000 U	760 U	760 U	760 U
2,4-Dichlorophenol		330 U	28000 U	14000 U	760 U	760 U	760 U
1,2,4-Trichlorobenzene		330 U	28000 U	14000 U	760 U	66 %	79 %
Naphthalene		330 U	28000 U	14000 U	760 U	760 U	760 U
4-Chloroaniline		330 U	28000 U	14000 U	760 U	760 U	760 U
Hexachlorobutadiene		330 U	28000 U	14000 U	760 U	760 U	760 U
4-Chloro-3-methylphenol		330 U	28000 U	14000 U	760 U	74 %	85 %
2-Methylnaphthalene		330 U	28000 U	14000 U	760 U	760 U	760 U
Hexachlorocyclopentadiene		330 U	28000 U	14000 U	760 U	760 U	760 U
2,4,6-Trichlorophenol		330 U	28000 U	14000 U	760 U	760 U	760 U
2,4,5-Trichlorophenol		840 U	70000 U	35000 U	1900 U	1900 U	1900 U

\* = Outside of EPA CLP QC limits.



RFW Batch Number: 03051430	Cust ID:	J00NP0	J00NN7	J00NN8	J00NN9	J00NN9	J00NN9	J00NN9
RFW#:	001	002	003	004	004 MS	004 MSD		
2-Chloronaphthalene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
2-Nitroaniline	840 U	70000 U	35000 U	1900 U	1900 U	1900 U	1900 U	
Dimethylphthalate	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Acenaphthylene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
2,6-Dinitrotoluene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
3-Nitroaniline	840 U	70000 U	35000 U	1900 U	1900 U	1900 U	1900 U	
Acenaphthene	330 U	28000 U	14000 U	760 U	72 %	84 %	84 %	
2,4-Dinitrophenol	840 U	70000 U	35000 U	1900 U	1900 U	1900 U	1900 U	
4-Nitrophenol	840 U	70000 U	35000 U	1900 U	64 %	76 %	76 %	
Dibenzofuran	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
2,4-Dinitrotoluene	330 U	28000 U	14000 U	760 U	71 %	85 %	85 %	
Diethylphthalate	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
4-Chlorophenyl-phenylether	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Fluorene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
4-Nitroaniline	840 U	70000 U	35000 U	1900 U	1900 U	1900 U	1900 U	
4,6-Dinitro-2-methylphenol	840 U	70000 U	35000 U	1900 U	1900 U	1900 U	1900 U	
N-Nitrosodiphenylamine (1)	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
4-Bromophenyl-phenylether	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Hexachlorobenzene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Pentachlorophenol	840 U	70000 U	35000 U	1900 U	57 %	69 %	69 %	
Phenanthrene	330 U	2500 J	14000 U	760 U	760 U	760 U	760 U	
Anthracene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Carbazole	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Di-n-butylphthalate	68 JB	28000 U	14000 U	760 U	760 U	760 U	760 U	
Fluoranthene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Pyrene	330 U	28000 U	14000 U	760 U	89 %	105 %	105 %	
Butylbenzylphthalate	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
3,3'-Dichlorobenzidine	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Benzo(a)anthracene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Chrysene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
bis(2-Ethylhexyl)phthalate	100 JB	28000 U	14000 U	47 JB	760 U	760 U	760 U	
Di-n-octyl phthalate	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Benzo(b)fluoranthene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Benzo(k)fluoranthene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Benzo(a)pyrene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Indeno(1,2,3-cd)pyrene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Dibenz(a,h)anthracene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	
Benzo(g,h,i)perylene	330 U	28000 U	14000 U	760 U	760 U	760 U	760 U	

(1) - Cannot be separated from Diphenylamine. \*= Outside of EPA CLP QC limits.

SBLKUB BS

## Sample Information

RFW#: 03LE0624-MB1 03LE0624-MB1

Matrix:	SOIL	SOIL
D.F.:	1.00	1.00
Units:	ug/Kg	ug/Kg

	Nitrobenzene-d5	75	%	74	%
Surrogate	2-Fluorobiphenyl	70	%	69	%
Recovery	Terphenyl-d14	94	%	89	%
	Phenol-d5	69	%	67	%
	2-Fluorophenol	68	%	68	%
	2,4,6-Tribromophenol	74	%	72	%

Chemical Name	330	U	66	%
Phenol	330	U	66	%
bis(2-Chloroethyl) ether	330	U	330	U
2-Chlorophenol	330	U	66	%
1,3-Dichlorobenzene	330	U	330	U
1,4-Dichlorobenzene	330	U	68	%
1,2-Dichlorobenzene	330	U	330	U
2-Methylphenol	330	U	330	U
2,2'-oxybis(1-Chloropropane)	330	U	330	U
3- and/or 4-Methylphenol	330	U	330	U
N-Nitroso-di-n-propylamine	330	U	71	%
Hexachloroethane	330	U	330	U
Nitrobenzene	330	U	330	U
Isophorone	330	U	330	U
2-Nitrophenol	330	U	330	U
2,4-Dimethylphenol	330	U	330	U
bis(2-Chloroethoxy) methane	330	U	330	U
2,4-Dichlorophenol	330	U	330	U
1,2,4-Trichlorobenzene	330	U	68	%
Naphthalene	330	U	330	U
4-Chloroaniline	330	U	330	U
Hexachlorobutadiene	330	U	330	U
4-Chloro-3-methylphenol	330	U	72	%
2-Methylnaphthalene	330	U	330	U
Hexachlorocyclopentadiene	330	U	330	U
2,4,6-Trichlorophenol	330	U	330	U
2,4,5-Trichlorophenol	840	U	840	U

\* = Outside of EPA CLP OC limits.

Cust ID: SBLKUB

SBLKUB BS

RFW#: 03LE0624-MB1 03LE0624-MB1

2-Chloronaphthalene	330	U	330	U
2-Nitroaniline	840	U	840	U
Dimethylphthalate	330	U	330	U
Acenaphthylene	330	U	330	U
2,6-Dinitrotoluene	330	U	330	U
3-Nitroaniline	840	U	840	U
Acenaphthene	330	U	73	%
2,4-Dinitrophenol	840	U	840	U
4-Nitrophenol	840	U	60	%
Dibenzofuran	330	U	330	U
2,4-Dinitrotoluene	330	U	83	%
Diethylphthalate	330	U	330	U
4-Chlorophenyl-phenylether	330	U	330	U
Fluorene	330	U	330	U
4-Nitroaniline	840	U	840	U
4,6-Dinitro-2-methylphenol	840	U	840	U
N-Nitrosodiphenylamine (1)	330	U	330	U
4-Bromophenyl-phenylether	330	U	330	U
Hexachlorobenzene	330	U	330	U
Pentachlorophenol	840	U	47	%
Phenanthrene	330	U	330	U
Anthracene	330	U	330	U
Carbazole	330	U	330	U
Di-n-butylphthalate	31	J	330	U
Fluoranthene	330	U	330	U
Pyrene	330	U	81	%
Butylbenzylphthalate	330	U	330	U
3,3'-Dichlorobenzidine	330	U	330	U
Benzo(a)anthracene	330	U	330	U
Chrysene	330	U	330	U
bis(2-Ethylhexyl)phthalate	21	J	330	U
Di-n-octyl phthalate	330	U	330	U
Benzo(b)fluoranthene	330	U	330	U
Benzo(k)fluoranthene	330	U	330	U
Benzo(a)pyrene	330	U	330	U
Indeno(1,2,3-cd)pyrene	330	U	330	U
Dibenz(a,h)anthracene	330	U	330	U
Benzo(g,h,i)perylene	330	U	330	U

(1) - Cannot be separated from Diphenylamine. \*= Outside of EPA CLP QC limits.

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00NPO

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2224

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L450-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D052516

Level: (low/med) LOW

Date Received: 05/17/03

% Moisture: 0 decanted: (Y/N) \_\_

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 05/26/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 5

CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.	UNKNOWN	4.052	200	JB
2.	ALDOL CONDENSATE	4.860	90	JA
3.	ALDOL CONDENSATE	5.382	5000	JAB
4.	UNKNOWN	6.695	300	JB
5.	UNKNOWN	21.154	200	J

10

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00NN7

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2224

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L450-002

Sample wt/vol: 15.0 (g/mL) G

Lab File ID: D052617

Level: (low/med) LOW

Date Received: 05/17/03

% Moisture: 4 decanted: (Y/N)

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 05/27/03

Injection Volume: 2.0 (uL)

Dilution Factor: 40.0

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 5

(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	16 - 36 MINUTES			
2.	UNRESOLVED HYDROCARBONS			
3.	ALDOL CONDENSATE	5.199	10000	JAB
4.	ALKANE	17.832	20000	J
5.	ALKANE	18.806	10000	J
6.	ALKANE	19.640	100000	J
7.	ALKANE	20.953	10000	J

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00NN8

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2224

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L450-003

Sample wt/vol: 15.0 (g/mL) G

Lab File ID: D052618

Level: (low/med) LOW

Date Received: 05/17/03

% Moisture: 4 decanted: (Y/N)

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 05/27/03

Injection Volume: 2.0 (uL)

Dilution Factor: 20.0

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3

(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.	16 - 36 MINUTES			
2.	UNRESOLVED HYDROCARBONS			
3.	ALDOL CONDENSATE	5.208	60000	JAB
4.	ALKANE	17.832	3000	J
5.	ALKANE	18.901	4000	J

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00NN9

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2224

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L450-004

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D052603

Level: (low/med) LOW

Date Received: 05/17/03

% Moisture: 12 decanted: (Y/N) \_\_

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 05/26/03

Injection Volume: 2.0 (uL)

Dilution Factor: 2.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3

(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.	UNKNOWN	3.952	2000	JB
2.	ALDOL CONDENSATE	5.257	10000	JAB
3.	UNKNOWN	6.613	300	JB

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKUB

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B03-015 H2224

Matrix: (soil/water) SOIL

Lab Sample ID: 03LE0624-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D052513

Level: (low/med) LOW

Date Received: 05/23/03

% Moisture:        decanted: (Y/N)   

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 05/25/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3

(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.	UNKNOWN	4.014	100	J
2.	ALDOL CONDENSATE	5.353	5000	JA
3.	UNKNOWN	6.692	200	J



## SAMPLE EXTRACTION RECORD

Sheet no.: 1

15

Extract. Date: 05/23/03

Extraction Batch No: 03LE0624

Analyst: MF

Method: SONC

Test: 0625

Cleanup Date:

Analyst:

Client: TNUHANFORD B03-015 H2222

LIMS Report Date: 05/27/03

Solvent: DCM/ACETONE

Adsorbent:

Sample No:	Client Name Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0305L432-	TNUHANFORD B03-015 H2222										
001 H	J00NL0	7	30.0	1.0		1.0		0.5	N	100.00	16.7
002 H	J00NK7	7	30.0	1.0		2.0		0.5	N	89.34	37.3
002 HS	J00NK7	7	30.0	1.0	1.0	4.0		0.5	N	89.34	74.6
002 HT	J00NK7	7	30.0	1.0	1.0	2.0		0.5	N	89.34	37.3
003 H	J00NK8	7	30.0	1.0		2.0		0.5	N	88.74	37.6
007 H	J00NK9	7	30.0	1.0		1.0		0.5	N	94.63	17.6
0305L434-	TNUHANFORD B03-024 H2216										
001 H	J00P13	7	30.0	1.0		1.0		0.5	N	99.91	16.7
002 H	J00NT5	7	30.0	1.0		1.0		0.5	N	98.96	16.8
003 H	J00NT6	7	30.0	1.0		1.0		0.5	N	98.33	16.9
004 H	J00NT7	7	30.0	1.0		1.0		0.5	N	98.71	16.9
004 HS	J00NT7	7	30.0	1.0	1.0	1.0		0.5	N	98.71	16.9
004 HT	J00NT7	7	30.0	1.0	1.0	1.0		0.5	N	98.71	16.9
005 H	J00NT8	7	30.0	1.0		1.0		0.5	N	98.46	16.9
006 H	J00NT9	7	30.0	1.0		1.0		0.5	N	99.14	16.8
0305L449-	TNUHANFORD B03-017 H2225										
001 H	J00NL4	7	10.0	1.0		1.0		0.5	N	99.25	50.4
0305L450-	TNUHANFORD B03-015 H2224										
001 H	J00NP0	7	30.0	1.0		1.0		0.5	N	99.98	16.7
002 H	J00NN7	7	15.0	1.0		2.0		0.5	N	95.85	69.6
003 H	J00NN8	7	15.0	1.0		1.0		0.5	N	95.60	34.9
004 H	J00NN9	7	30.0	1.0		1.0		0.5	N	87.88	19.0
004 HS	J00NN9	7	30.0	1.0	1.0	1.0		0.5	N	87.88	19.0

## Comments:

Surrogate: 500 UL ESU BNA 89914005 @100-150 UG/ML

Spike: 500 UL EMS BNA 89912203 @100-150 UG/ML

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
Cancelled R1	4/25/03				

## SAMPLE EXTRACTION RECORD

Sheet no.: 2

16

Extract. Date: 05/23/03

Extraction Batch No: 03LE0624

Analyst: MF

Method: SONC

Test: 0625

Cleanup Date:

Analyst:

Client: TNUHANFORD B03-015 H2222

LIMS Report Date: 05/27/03

Solvent: DCM/ACETONE

Adsorbent:

Client Name		pH	Initial	Surr.	Spike	Final	Final	Split	GPC	%	C/D
Sample No:	Client ID										
			WT/VOL	Mult.	Mult.	VOL	VOL	Mult.	Y/N	Solids	FACTOR
0305L450-	TNUHANFORD B03-015 H2224										
004 HT	J00NN9	7	30.0	1.0	1.0	1.0		0.5	N	87.88	19.0
03LE0624-MB1 H	SBLKUB	7	30.0	1.0		1.0		0.5	N	100.00	16.7
03LE0624-MB1 HS	SBLKUB	7	30.0	1.0	1.0	1.0		0.5	N	100.00	16.7

## Comments:

Surrogate: 500 UL ESU BNA 89914005 @100-150 UG/ML

Spike: 500 UL EMS BNA 89912203 @100-150 UG/ML

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
Cancelled RI	RG/S				

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**[illegible]

0305L432

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU Hemford B03-015</u>	Refrigerator # <u>2</u>	A	B	C	D	E	F	G
Est. Final Proj. Sampling Date _____	#/Type Container	Liquid						
Project # <u>11343-606-001-9999-00</u>	Solid	<u>1ag</u>	<u>1ag</u>	<u>1ag</u>	<u>1ag</u>	<u>1ag</u>	<u>1ag</u>	<u>1ag</u>
Project Contact/Phone # _____	Liquid							
Lionville Laboratory Project Manager <u>Orlette Johnson</u>	Solid	<u>120</u>	<u>250</u>	<u>250</u>	<u>60</u>	<u>120</u>	<u>120</u>	<u>60</u>
QC <u>SPC</u> Del <u>STD</u> TAT <u>Today</u>	Preservatives	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
Date Rec'd <u>5-17-03</u> Date Due <u>5-24-03</u>	ANALYSES REQUESTED →	ORGANIC			INORG			
	VOA	BNA	Pest/PCB	Herb	PCB	Metal (U, Pb, Cu, Zn)	Sulfide	TPH

MATRIX CODES:  S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate W1 - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix OC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only															
			MS	MSD				0625H	0605H 0600	0HGGY	0PCB			MACRO	TCLP		ISFD		IPHC				
	001	J00NLO			S	5-13-03	0900		X						X								
	002	J00NK7			I	↓	0920		X	X	X				X	X		X					
	003	J00NK8			I	↓	↓		X	X	X				X	X		X					
	004	J00NPO			I	5-14-03	0830		X						X								
	005	J00NN7			I	↓	0900		X				X		X								
	006	J00NN8			I	↓	↓		X				X		X								
	007	J00NK9			I	5-15-03	1220		X	X					X	X		X				X	
	008	J00NN9			I	↓	1300		X	X					X							X	

Special Instructions: SAF # B03-015Run Matrix QC (Do Not Use - 004)

DATE/REVISIONS:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Lionville Laboratory Use Only

 Samples were: ☒ Shipped or  
 Hand Delivered \_\_\_\_\_  
 Airbill # \_\_\_\_\_

 2) Ambient or Chilled \_\_\_\_\_  
 3) Received in Good Condition ☒ or N

 4) Samples Properly Preserved ☒ or N

 5) Received Within Holding Times ☒ or N

 Tamper Resistant Seal was:  
 1) Present on Outer Package ☒ or N

 2) Unbroken on Outer Package ☒ or N

 3) Present on Sample ☒ or N

 4) Unbroken on Sample ☒ or N

 COC Record Present Upon Sample Rec't ☒ or N

 Cooler Temp. 0.3 °C

Relinquished by	Received by	Date	Time
<u>GeoEx</u>	<u>Orlette Johnson</u>	<u>5-17-03</u>	<u>1155</u>

Relinquished by	Received by	Date	Time
<u>COMPOSITE WASTE</u>	<u>ORIGINAL REWRITTEN</u>		

 Discrepancies Between Samples Labels and COC Record? Y or ☒ N  
 NOTES:

790292049170/0.8 - 792250144333

<b>Bechtel Hanford Inc.</b>				<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>												
Collector Fahlberg				Company Contact M Stankovich				Telephone No. 531-7620		Project Coordinator KESSNER, JH		Price Code <b>8B</b>		Data Turnaround <b>7 Days</b>		
Project Designation Remaining Sites Confirmation Sampling-Soil				Sampling Location 600-139				SAF No. B03-015		Air Quality <input type="checkbox"/>		19				
Ice Chest No. <b>ERC 96039</b>				Field Logbook No. EL1577		COA C17HXU671C		Method of Shipment Fed EX								
Shipped To TM/RECRA				Offsite Property No. <b>A030231</b>				Bill of Lading/Air Bill No. <b>see ospl</b>								
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> Non-Rad Area, No Activity Report Required  <b>Special Handling and/or Storage</b> <b>COOL 4°C</b>				<b>Preservation</b>		None	Cool 4C	Cool 4C								
				<b>Type of Container</b>		aG	aG	aG								
				<b>No. of Container(s)</b>		1	1	1								
				<b>Volume</b>		60mL	120mL	60mL								
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions		Semi-VOA - 8270A (TCL)		VOA - 8260A (TCL)		120 5.13.03 5.13.03						
<b>Sample No.</b>		<b>Matrix *</b>		<b>Sample Date</b>		<b>Sample Time</b>										
J00NLO		SOIL		5.13.03		0900		X		X						
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>  (1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7471 - (CV)    Personnel not available to relinquish samples from the 3728 Ref # <b>3A</b> on <b>5/16/03</b>						<b>Matrix *</b> S=Soil SE=Soilment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W1=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From		Date/Time <b>1430</b>		Received By/Stored In		Date/Time <b>1450</b>										
<b>REF 3A 3728</b>		<b>5.13.03</b>		<b>3A 3728</b>		<b>5.13.03</b>										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<b>REF 3A 3728</b>		<b>51603 1100</b>		<b>SJOALC/KL</b>		<b>51603 1100</b>										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<b>SJOALC/KL</b>		<b>51603 1100</b>		<b>FED EX</b>												
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<b>FED EX</b>		<b>5.17.03 1155</b>		<b>SJOALC/KL</b>		<b>5.17.03 1155</b>										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time										
<b>LABORATORY SECTION</b>		Received By		Title				Date/Time								
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By				Date/Time								

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>						B03-015-98		Page 1 of 1		
Collector Fahlberg		Company Contact M Stankovich		Telephone No. 531-7620		Project Coordinator KESSNER, JH		Price Code <b>8B</b>		Data Turnaround <b>7 Days</b>		
Project Designation Remaining Sites Confirmation Sampling-Soil		Sampling Location 600-139		SAF No. B03-015		Air Quality <input type="checkbox"/>						
Ice Chest No. <b>ERC 96 039</b>		Field Logbook No. EL1577		COA C17HXU671C		Method of Shipment Fed EX						
Shipped To TMA/RECRA		Offsite Property No. <b>A030231</b>				Bill of Lading/Air Bill No. <b>SEE OSPC</b>						
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> Non-Rad Area, No Activity Report Required  <b>Special Handling and/or Storage</b> Cool 4°C				Preservation		None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
				Type of Container		aG	aG	aG	aG	aG	aG	
				No. of Container(s)		1	1	1	1	1	1	
				Volume		60mL	240mL	120mL	60mL	120mL	120mL	
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions.		PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	Sulfides - 9030	Total Cyanide - 9010		
Sample No.		Matrix *		Sample Date		Sample Time						
J00NK7		SOIL		5-13-03		0920		X	X	X		
J00NK8		SOIL		5-13-03		0920		X	X	X		
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)  Personnel not available to relinquish samples from the 3728 Ref # <u>SA</u> on <u>5/16/03</u>				
R. F. Fahlberg		5-13-03		3A 3728		5-13-03						
REF 3A 3728		5/6/03 1100		SIGALE		5/6/03 1100						
SIGALE		5/6/03 1100		FED EX								
5/16/03 1155		5-17-03 1155										
5/16/03 1155		5-17-03 1155										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title				Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time				

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B03-015-103</b> Page 1 of 1	
Collector Doug Bowers		Company Contact Mike Stankovich		Telephone No. 372-9082		Project Coordinator KESSNER, JH	
Project Designation Remaining Sites Confirmation Sampling-Soil		Sampling Location 600-181 oil dump area		SAF No. B03-015		Price Code <b>8B</b> Air Quality <input type="checkbox"/>	
Ice Chest No. <b>ERC 99 055</b>		Field Logbook No. EL-1578		COA C17HXU671C		Method of Shipment Fed Ex	
Shipped To <u>TMA/RECRA</u>		Offsite Property No. <b>A030232</b>		Bill of Lading/Air Bill No. <b>SEE OSP.C</b>			
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>  <b>Special Handling and/or Storage</b>				Preservation	None	Cool 4C	Cool 4C
				Type of Container	aG	aG	aG
				No. of Container(s)	1	1	1
				Volume	60mL	120mL	60mL
				SAMPLE ANALYSIS			
Sample No.	Matrix *	Sample Date	Sample Time				
J00NP0	SOIL	5-14-03	0830	X	X	X	
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From <b>Doug Bowers</b> Date/Time <b>5-14-03/1130</b>		Received By/Stored In <b>Ref 3A 3728</b> Date/Time <b>5-14-03/1130</b>		<b>(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)</b>  <b>Do not use for QA/QC.</b>  Personnel not available to relinquish samples from the 3728 Ref # <b>3A</b> on <b>5/16/03</b>			
Relinquished By/Removed From <b>Ref 3A 3728</b> Date/Time <b>51603 1100</b>		Received By/Stored In <b>SJGALC/Ref 51603</b> Date/Time <b>1100</b>					
Relinquished By/Removed From <b>SJGALC/Ref 51603</b> Date/Time <b>1100</b>		Received By/Stored In <b>FED EX</b> Date/Time					
Relinquished By/Removed From <b>Ref 3A 3728</b> Date/Time <b>5-17-03 1155</b>		Received By/Stored In <b>SJGALC/Ref 51603</b> Date/Time <b>1155</b>					
Relinquished By/Removed From		Received By/Stored In					
Relinquished By/Removed From		Received By/Stored In		Matrix *			
LABORATORY SECTION		Received By		Title		Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time	

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>				<b>B03-015-102</b>		Page 1 of 1						
Collector Doug Bowers		Company Contact Mike Stankovich		Telephone No. 372-9082		Project Coordinator KESSNER, JH		Price Code <b>8B</b> Data Turnaround <b>7 Days</b>						
Project Designation Remaining Sites Confirmation Sampling-Soil		Sampling Location 600-181 oil dump area		SAF No. B03-015		Air Quality <input type="checkbox"/>								
Ice Chest No. <b>ERC 99 055</b>		Field Logbook No. EL-1578		COA C17HXU671C		Method of Shipment Fed Ex								
Shipped To TMA/RECRA		Offsite Property No. <b>A030232</b>		Bill of Lading/Air Bill No. <b>SEE OPR</b>										
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	None	Cool 4C	Cool 4C	Cool 4C	<b>40C</b>					
				Type of Container	aG	aG	aG	aG	<b>aG</b>					
				No. of Container(s)	1	1	1	1	<b>1</b>					
				Volume	60mL	250mL	120mL	60mL	<b>60mL</b>					
SAMPLE ANALYSIS				See item (1) in Special Instructions	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - 808151 <b>870 5-11-03</b>	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	<b>TPH 418.1</b>						
Sample No.	Matrix *	Sample Date	Sample Time											
J00NN7	SOIL	5-14-03	0900	X	X	X								
J00NN8	SOIL	5-14-03	0900	X	X	X								
J00NN9	SOIL													
<b>NO 5-14-03</b>														
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b>		
Relinquished By/Removed From <b>Doug Bowers</b> Date/Time <b>5-14-03/1130</b>				Received By/Stored In <b>REF 3A</b> Date/Time <b>5-14-03/1130</b>				(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury - 7471 - (CV)  Personnel not available to relinquish samples from the 3728 Ref # <b>3A</b> on <b>5/16/03</b>				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W= Wipe L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From <b>REF 3A</b> Date/Time <b>51603 1100</b>				Received By/Stored In <b>SJGALE</b> Date/Time <b>51607 1100</b>										
Relinquished By/Removed From <b>SJGALE</b> Date/Time <b>51603 1100</b>				Received By/Stored In <b>FED EX</b> Date/Time										
Relinquished By/Removed From <b>Ref 3A</b> Date/Time <b>5-17-03 1155</b>				Received By/Stored In <b>Ref 3A</b> Date/Time <b>5-17-03 1155</b>										
Relinquished By/Removed From				Received By/Stored In										
Relinquished By/Removed From				Received By/Stored In										
<b>LABORATORY SECTION</b>		Received By		Title		Date/Time								
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By		Date/Time								



<b>Bechtel Hanford Inc.</b>				<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>						B03-015-99		Page 1 of 1	
Collector Fahlberg				Company Contact M Stankovich		Telephone No. 531-7620		Project Coordinator KESSNER, JH		Price Code <b>8B</b>		Data Turnaround <b>7 Days</b>	
Project Designation Remaining Sites Confirmation Sampling-Soil				Sampling Location 600-139		SAF No. B03-015		Air Quality <input type="checkbox"/>					
Ice Chest No. <b>ERC 96 039</b>				Field Logbook No. EL1577		COA C17HXU671C		Method of Shipment Fed EX					
Shipped To TMA/RECRA				Offsite Property No. <b>A030231</b>				Bill of Lading/Air Bill No. <b>SEE OSPL</b>					
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> Non-Rad Area, No Activity Report Required  <b>Special Handling and/or Storage</b> <b>COOL 4°C</b>				Preservation		None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
				Type of Container		aG	aG	aG	aG	aG	aG	aG	
				No. of Container(s)		1	1	1	1	1	1		
				Volume		60mL	240mL	120mL	60mL	60mL	120mL	120mL	
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions.		PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8160A (TCL)	TPH (Total) - 418.1	Sulfides - 9030	Total Cyanide - 9010		
Sample No.	Matrix *	Sample Date	Sample Time										
J00NK9	SOIL	5-15-03	1200	X	X	X		X	X	X			
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>					
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time	(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7471 - (CV)  Personnel not available to relinquish samples from the 3728 Ref # <b>SA</b> on <b>5/16/03</b>							
R. Fahlberg		5-15-03	3A		5-15-03								
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time								
REF 3A		5/16/03 1100	S. GALE		5/16/03 1100								
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time								
S. GALE		5/16/03 1100	FED EX										
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time	Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other							
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time								
LABORATORY SECTION		Received By		Title		Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time							

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>						<b>B03-015-102</b>		Page 1 of 1	
Collector Doug Bowers		Company Contact Mike Stankovich		Telephone No. 372-9082		Project Coordinator KESSNER, JH		Price Code <b>8B</b>		Data Turnaround <b>7 Days</b>	
Project Designation Remaining Sites Confirmation Sampling-Soil		Sampling Location 600-181 oil dump area				SAF No. B03-015		Air Quality <input type="checkbox"/>			
Ice Chest No. <b>ERC 99 055</b>		Field Logbook No. EL-1578		COA C17HXU671C		Method of Shipment Fed Ex					
Shipped To TMA/RECRA		Offsite Property No. <b>A030 252</b>				Bill of Lading/Air Bill No. <b>58E007C</b>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	None	Cool 4C	Cool 4C	Cool 4C	<b>4°C</b>		
				Type of Container	aG	aG	aG	aG	<b>aG</b>		
				No. of Container(s)	1	1	1	1	<b>1</b>		
				Volume	60mL	250mL	120mL	60mL	<b>60mL</b>		
SAMPLE ANALYSIS				See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	<b>TPH total 418.1</b>			
Sample No.	Matrix *	Sample Date	Sample Time								
J00NN7 <b>8-19</b>	SOIL										
J00NN8 <b>5-14-03</b>	SOIL										
J00NN9	SOIL	<b>5-17-03</b>	<b>1300</b>	<b>X</b>	<b>X</b>	<b>X</b>		<b>X</b>			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From <b>Doug Bowers</b>		Date/Time <b>5-15-03/1430</b>		Received By/Stored In <b>Raf 3A 3728</b>		Date/Time <b>5-15-03/1430</b>		(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7471 - (CV)  Personnel not available to relinquish samples from the 3728 Ref # <b>3A</b> on <b>5/16/03</b>			
Relinquished By/Removed From <b>REF 3A 3728</b>		Date/Time <b>51603 1100</b>		Received By/Stored In <b>SJGALON</b>		Date/Time <b>51603 1100</b>					
Relinquished By/Removed From <b>SJGALON</b>		Date/Time <b>51603 1100</b>		Received By/Stored In <b>FED EX</b>		Date/Time					
Relinquished By/Removed From <b>Doug Bowers</b>		Date/Time <b>51703 1155</b>		Received By/Stored In <b>Handwritten</b>		Date/Time <b>51703 1155</b>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By				Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time	

# LIONVILLE LABORATORY INCORPORATED

## SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hamford

Purchase Order/Project:

DATE: 5.17.03

Lab# / SOW# / Release #: B03-015

Laboratory SDG #:

0305L432

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- |  |   |                             |   |  |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)   | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc?  | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date)   | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 99055 / 0.8°

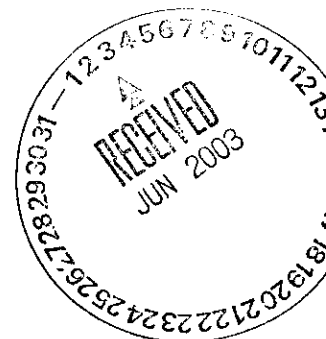
ERC 96039 / 0.3°

Laboratory Sample Custodian:

Laboratory Project Manager:

*[Signature]*

25



Lionville Laboratory, Inc.  
PEST/PCB ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD B03-015 H2224

DATE RECEIVED: 05/17/03

LVL LOT # :0305L450

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00NN9	004	S	03LE0597	05/15/03	05/19/03	05/24/03
J00NN9	004 MS	S	03LE0611	05/15/03	05/21/03	05/24/03
J00NN9	004 MSD	S	03LE0611	05/15/03	05/21/03	05/24/03

LAB QC:

PBLKUJ	MB1	S	03LE0597	N/A	05/19/03	05/23/03
PBLKUJ	MB1 BS	S	03LE0597	N/A	05/19/03	05/23/03
PBLKUK	MB1	S	03LE0611	N/A	05/21/03	05/24/03
PBLKUK	MB1 BS	S	03LE0611	N/A	05/21/03	05/24/03

*Handwritten signature* 5/20/03



---

### Analytical Report

**Client:** TNU-HANFORD B03-015  
**LVL #:** 0305L450  
**SDG/SAF #:** H2224/B03-015

**W.O. #:** 11343-606-001-9999-00  
**Date Relogged:** 05-17-03

### PESTICIDE

One (1) soil sample was collected on 05-14,15-03 and relogged from LVLI batch # 0305L432.

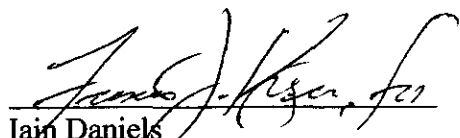
The sample and its associated QC samples were extracted on 05-19,21-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-23,24-03. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

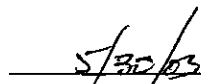
1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. The sample and its associated QC samples received Florisil and Sulfur cleanups.
4. The method blanks were below the reporting limits for all target compounds.
5. Six (6) of eight (8) obtainable surrogate were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
6. Four (4) of twelve (12) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
7. Matrix spike recoveries were unobtainable due to the dilution required for analysis.
8. The sample and its matrix QC required 50-fold instrument dilutions due to the high concentrations of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
9. All initial calibrations associated with this data set were within acceptance criteria.
10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 9 pages.

11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

pefr:\group\data\pest\tnu hanford\05L-450.pes

  
Date

# Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 03GC154

Initiator: Bryce Santoro  
 Date: 5/27/03  
 Client: TNU

Batch: 03051431, 432, 450  
 Samples: BS  
 Method: SW846/MCAWW/CLP/

Parameter: 0608H  
 Matrix: Soil  
 Prep Batch: 03LE0597, 0611

## 1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C  
☐ Transcription Error ☐ Wrong Test Code ☐ Other \_\_\_\_\_

## b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible  
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold  
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note\*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: \_\_\_\_\_

## c. Problem (Include all relevant specific results; attach data if necessary)

- ① High spike and surrogate recoveries in BS (03LE0597, see attached). Samples contain hits.
- ② High surrogate recovery in Blank (03LE0611, extracted w/ 450-004 MS MSD). Blank is clean.

## 2. Known or Probable Causes(s)

## 3. Discussion and Proposed Action

Other Description: \_\_\_\_\_

- ☐ Re-log  
☐ Entire Batch  
☐ Following Samples: \_\_\_\_\_  
☐ Re-leach  
☐ Re-extract  
☐ Re-digest  
☐ Revise EDD  
☐ Change Test Code to \_\_\_\_\_  
☐ Place On/Take Off Hold (circle)

## 4. Project Manager Instructions...signature/date: [Signature] 5/27/03

- ☒ Concur with Proposed Action  
☐ Disagree with Proposed Action; See Instruction  
☐ Include in Case Narrative  
☐ Client Contacted:  
 Date/Person \_\_\_\_\_  
☐ Add  
☐ Cancel

## 5. Final Action...signature/date: [Signature] 5/27/03

Other Explanation: \_\_\_\_\_

- ☐ Verified re-[log][leach][extract][digest][analysis] (circle)  
☒ Included in Case Narrative  
☐ Hard Copy COC Revised  
☐ Electronic COC Revised  
☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR  
☐ X Initiator  
☒ X Lab General Manager: M. Taylor  
☒ X Project Mgr: Stone/Johnson/Haslett  
☐ X Technical Mgr: Wesson/Daniels  
☐ X QA (file)  
☐ Data Management: Feldman  
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR  
☐ Metals: Beegle  
☐ Inorganic: Perrone  
☐ GC/LC: Kiger  
☐ MS: Rychlak/Layman  
☐ Log-in: Melnic  
☐ Admin: Soos  
☐ Other: \_\_\_\_\_



## GLOSSARY OF PESTICIDE/PCB DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.





## GLOSSARY OF PESTICIDE/PCB DATA

- P**     =     This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D**     =     This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C**     =     This flag applies to a compound that has been confirmed by GC/MS.

Report Date: 05/27/03 15:33

Client: **TNUHANFORD B03-015 H2224** Work Order: 11343606001 Page: 1

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
% = Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

2/20/23

Client: **TNUHANFORD B03-015 H2224** Work Order: 11343606001 Page: 2

Sample	RFW#:	03LE0611-MB1
Information	Matrix:	SOIL
	D.F.:	1.00
	Units:	UG/KG

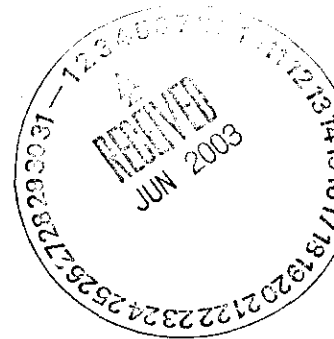
[illegible]

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

7/6/2013

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

[illegible]



Lionville Laboratory, Inc.  
PCB ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD B03-015 H2224

DATE RECEIVED: 05/17/03

LVL LOT # :0305L450

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00NN7	002	S	03LE0597	05/14/03	05/19/03	05/24/03
J00NN8	003	S	03LE0597	05/14/03	05/19/03	05/24/03
J00NN9	004	S	03LE0597	05/15/03	05/19/03	05/27/03
J00NN9	004 MS	S	03LE0611	05/15/03	05/21/03	05/24/03
J00NN9	004 MSD	S	03LE0611	05/15/03	05/21/03	05/24/03

LAB QC:

PBLKUJ	MB1	S	03LE0597	N/A	05/19/03	05/23/03
PBLKUJ	MB1 BS	S	03LE0597	N/A	05/19/03	05/23/03
PBLKUK	MB1	S	03LE0611	N/A	05/21/03	05/24/03
PBLKUK	MB1 BS	S	03LE0611	N/A	05/21/03	05/24/03

*7/15/03*



---

### Analytical Report

**Client:** TNU-HANFORD B03-015  
**LVL #:** 0305L450  
**SDG/SAF #:** H2224/B03-015

**W.O. #:** 11343-606-001-9999-00  
**Date Relogged:** 05-17-03

### PCB

The set of samples consisted of three (3) soil samples collected on 05-14,15-03 and relogged from LVLI batch # 0305L432.


The samples and their associated QC samples were extracted on 05-19,21-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-23,24,27-03. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. All samples and their associated QC samples received Florisil, Sulfuric Acid, and Sulfur cleanups.
4. The method blanks were below the reporting limits for all target compounds.
5. Five (5) of eight (8) obtainable surrogate were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
6. All blank spike recoveries were within acceptance criteria.
7. Matrix spike recoveries were unobtainable due to the dilution required for analysis.
8. All samples required 50-fold instrument dilutions due to the high concentrations of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
9. All initial calibrations associated with this data set were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 8 pages.

10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

  
Date

pefr:\group\data\pest\tnu hanford\05L-450.pcb

# Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06C151

Initiator: Angie Spence  
Date: 5/27/03  
Client: TNO

Batch: 0305481432441450  
Samples: AS  
Method: SW846/MCAWW/CLP/

Parameter: PAH  
Matrix: Soil  
Prep Batch: 03LE0597

## 1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C  
☐ Transcription Error ☐ Wrong Test Code ☐ Other \_\_\_\_\_

### b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible  
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold  
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: \_\_\_\_\_

### c. Problem (Include all relevant specific results; attach data if necessary)

Ⓞ High surrogate recovery in AS. All spike recoveries good.

## 2. Known or Probable Causes(s)

## 3. Discussion and Proposed Action

Other Description: Narrative

- ☐ Re-log
- ☐ Entire Batch
- ☐ Following Samples: \_\_\_\_\_
- ☐ Re-leach
- ☐ Re-extract
- ☐ Re-digest
- ☐ Revise EDD
- ☐ Change Test Code to \_\_\_\_\_
- ☐ Place On/Take Off Hold (circle)

## 4. Project Manager Instructions...signature/date:

- ☒ Concur with Proposed Action
- ☐ Disagree with Proposed Action; See Instruction
- ☐ Include in Case Narrative
- ☐ Client Contacted:
- ☐ Date/Person \_\_\_\_\_
- ☐ Add
- ☐ Cancel

## 5. Final Action...signature/date:

Other Explanation:

- ☐ Verified re-[log][leach][extract][digest][analysis] (circle)
- ☒ Included in Case Narrative
- ☐ Hard Copy COC Revised
- ☐ Electronic COC Revised
- ☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR

- ☒ X Initiator
- ☒ X Lab General Manager: M. Taylor
- ☒ X Project Mgr: Stone/Johnson/Haslett
- ☒ X Technical Mgr: Wesson/Daniels
- ☒ X QA (file)
- ☐ Data Management: Feldman
- ☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR

- ☐ Metals: Beegle
- ☐ Inorganic: Perrone
- ☐ GC/LC: Kiger
- ☐ MS: Rychlak/Layman
- ☐ Log-in: Melnic
- ☐ Admin: Soos
- ☐ Other: \_\_\_\_\_





## GLOSSARY OF PESTICIDE/PCB DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



## GLOSSARY OF PESTICIDE/PCB DATA

- P** = This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.

## Lionville Laboratory, Inc.

PCBs by GC

Report Date: 05/27/03 13:53

RFW Batch Number: 0305L450

Client: TNUHANFORD B03-015 H2224 Work Order: 11343606001 Page: 1

	Cust ID:	J00NN7	J00NN8	J00NN9	J00NN9	J00NN9	PBLKUJ
Sample	RFW#:	002	003	004	004 MS	004 MSD	03LE0597-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	50.0	50.0	50.0	50.0	50.0	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Decachlorobiphenyl	D %	D %	D %	D %	D %	130 * %
	Tetrachloro-m-xylene	D %	D %	D %	D %	D %	105 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Aroclor-1016		780 U	780 U	850 U	D %	D %	15 U
Aroclor-1221		780 U	780 U	850 U	850 U	850 U	15 U
Aroclor-1232		780 U	780 U	850 U	850 U	850 U	15 U
Aroclor-1242		780 U	780 U	850 U	850 U	850 U	15 U
Aroclor-1248		780 U	780 U	850 U	850 U	850 U	15 U
Aroclor-1254		780 U	780 U	850 U	850 U	850 U	15 U
Aroclor-1260		780 U	780 U	850 U	D %	D %	15 U

	Cust ID:	PBLKUJ BS	PBLKUK	PBLKUK BS
Sample	RFW#:	03LE0597-MB1	03LE0611-MB1	03LE0611-MB1
Information	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG
Surrogate:	Decachlorobiphenyl	155 * %	155 * %	135 * %
	Tetrachloro-m-xylene	120 * %	115 %	90 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====				
Aroclor-1016		115 %	15 U	89 %
Aroclor-1221		15 U	15 U	15 U
Aroclor-1232		15 U	15 U	15 U
Aroclor-1242		15 U	15 U	15 U
Aroclor-1248		15 U	15 U	15 U
Aroclor-1254		15 U	15 U	15 U
Aroclor-1260		122 %	15 U	102 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

Client TNU-Hanford B03-015								
Est. Final Proj. Sampling Date _____								
Project # 11343 - 606 - 001-9999-03								
Project Contact/Phone # _____								
Lionville Laboratory Project Manager OJ								
QC SPEC Del STD TAT 7 days								
Date Rec'd 5-17-03 Date Due 5-24-03								
Refrigerator # 2								
#/Type Container Liquid Solid IAH IAG → IAG FA IAC								
Volume Liquid Solid 120 250 → 60 60								
Preservatives -								
ANALYSES REQUESTED ORGANIC INORG VOA BNA Pest/PCB Herb Metal CN TPH								
MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)  MS MSD	Matrix S ↓	Date Collected 5-14-03 ↓	Time Collected 0830 ↓ 0900 ↓ ↓ 5-15-03 1300	OCSH X OCOSH X OHBAx X OPCB X MRLATO X IPHC X	Lionville Laboratory Use Only
Special Instructions: SAF # B03-015 Run Matrix QC (do not run -001)								
Relog of 0305 L 432 - 004, -005, -006, -008								
DATE/REVISIONS: 5-22-03 1. OPGB required for -002, -003 & -004 Jim Cancel OCOSH + OHBAx - Insufficient Volume 5/22/03 _____ _____ _____								
Lionville Laboratory Use Only Samples were: 1) Shipped ____ or Hand Delivered ____ Airbill # _____ 2) Ambient or Chilled 3) Received in Good Condition Y or N 4) Samples Properly Preserved Y or N 5) Received Within Holding Times Y or N Tamper Resistant Seal was: 1) Present on Outer Package Y or N 2) Unbroken on Outer Package Y or N 3) Present on Sample Y or N 4) Unbroken on Sample Y or N COC Record Present Upon Sample Rec't Y or N Cooler Temp. _____ °C								
Discrepancies Between Samples Labels and COC Record? Y or N NOTES:	Relinquished by Received by Date Time Relinquished by Received by Date Time							
Relog								

Lionville Laboratory, Inc.  
HBGX ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD B03-015 H2224



DATE RECEIVED: 05/17/03

LVL LOT # :0305L450

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00NN9	004	S	03LE0600	05/15/03	05/21/03	05/24/03
J00NN9	004 MS	S	03LE0600	05/15/03	05/21/03	05/24/03
J00NN9	004 MSD	S	03LE0600	05/15/03	05/21/03	05/24/03

LAB QC:

PBLKUL	MB1	S	03LE0600	N/A	05/21/03	05/23/03
PBLKUL	MB1 BS	S	03LE0600	N/A	05/21/03	05/27/03

*Handwritten signature/initials*



### Analytical Report

Client: TNU HANFORD B03-015  
LVL#: 0305L450  
SDG/SAF#: H2224/B03-015

W.O.#: 11343-606-001-9999-00  
Date Received: 05-17-03


### HERBICIDE

One (1) soil sample was collected on 05-15-03.

The sample and its associated QC samples were extracted on 05-21-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-23,24,27-03. The extraction and analysis procedure was based on method 8151A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVLI's sample acceptance policy.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. All obtainable surrogate recoveries were within acceptance criteria.
5. One (1) of eight (8) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
6. Matrix spike recoveries were unobtainable due to the dilution required for analysis.
7. The sample and its matrix QC required 50-fold instrument dilutions due the high concentrations of non-target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. To the best of my knowledge, this data report is in compliance with the terms and conditions of the purchase order, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hard copy data package and in the electronic data submitted on diskette has been authorized by the cognizant laboratory manager or his/her designee to be accurate as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

  
Date

pef7somr:\group\data\herb\tnu\05L-450.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 7 pages.

# Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 036C153

Initiator: Byrce Sartano  
Date: 5/27/03  
Client: TUV

Batch: 03052 431, 432, 450  
Samples: BS  
Method: SV846/MCAWW/CLP/

Parameter: OHXGX  
Matrix: Soil  
Prep Batch: 03LE0600

## 1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C  
☐ Transcription Error ☐ Wrong Test Code ☐ Other

## b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible  
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold  
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note\*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: \_\_\_\_\_

## c. Problem (Include all relevant specific results; attach data if necessary)

① Low Dicamba recovery in BS @ 43% (ex limit = 50%). All samples are clear of Dicamba.

## 2. Known or Probable Causes(s)

## 3. Discussion and Proposed Action

Other Description:

☐ Re-log  
☐ Entire Batch  
☐ Following Samples: \_\_\_\_\_  
☐ Re-leach  
☐ Re-extract  
☐ Re-digest  
☐ Revise EDD  
☐ Change Test Code to \_\_\_\_\_  
☐ Place On/Take Off Hold (circle)

*narrate*

## 4. Project Manager Instructions...signature/date:

☒ Concur with Proposed Action  
☐ Disagree with Proposed Action; See Instruction  
☐ Include in Case Narrative  
☐ Client Contacted:  
Date/Person \_\_\_\_\_  
☐ Add  
☐ Cancel

## 5. Final Action...signature/date:

Other Explanation:

☒ Verified re-[log][leach][extract][digest][analysis] (circle)  
☐ Included in Case Narrative  
☐ Hard Copy COC Revised  
☐ Electronic COC Revised  
☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR  
☐ X Initiator  
☐ X Lab General Manager: M. Taylor  
☒ X Project Mgr: Stone/Johnson/Haslett  
☐ X Technical Mgr: Wesson/Daniels  
☐ X QA (file)  
☐ Data Management: Feldman  
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR  
☐ Metals: Beegle  
☐ Inorganic: Perrone  
☐ GC/LC: Kiger  
☐ MS: Rychlak/Layman  
☐ Log-in: Melnic  
☐ Admin: Soos  
☐ Other: \_\_\_\_\_



## GLOSSARY OF HERBICIDE DATA

### DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

### ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.





## GLOSSARY OF HERBICIDE DATA

- P** = This flag is used for an Herbicide target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by HPLC.

Lionville Laboratory, Inc.

Herbicides, Special List

Report Date: 05/29/03 10:51

RFW Batch Number: 0305L450

Client: TNUHANFORD B03-015 H2224 Work Order: 11343606001 Page: 1

	Cust ID:	J00NN9	J00NN9	J00NN9	PBLKUL	PBLKUL BS
Sample	RFW#:	004	004 MS	004 MSD	03LE0600-MB1	03LE0600-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	50.0	50.0	50.0	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Surrogate:	DCAA	D %	D %	D %	48 %	108 %
		fl	fl	fl	fl	fl
Dalapon		9500 U	D %	D %	170 U	78 %
Dicamba		3800 U	D %	D %	67 U	43 * %
Dichloroprop		9500 U	D %	D %	170 U	92 %
2,4-D		1900 U	D %	D %	33 U	76 %
2,4,5-TP (Silvex)		950 U	D %	D %	17 U	92 %
2,4,5-T		950 U	D %	D %	17 U	86 %
2,4-DB		9500 U	D %	D %	170 U	93 %
Dinoseb		950 U	D %	D %	17 U	89 %

75 5/23/03

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.  
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**[illegible]

Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD B03-015 H2224

DATE RECEIVED: 05/17/03

LVL LOT # :0305L450

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
---------------------	-------	-----	--------	------------	-----------	----------

J00NP0

SILVER, TOTAL	001	S	03L0278	05/14/03	05/21/03	05/28/03
ARSENIC, TOTAL	001	S	03L0278	05/14/03	05/21/03	05/28/03
BARIUM, TOTAL	001	S	03L0278	05/14/03	05/21/03	05/28/03
CADMIUM, TOTAL	001	S	03L0278	05/14/03	05/21/03	05/28/03
CHROMIUM, TOTAL	001	S	03L0278	05/14/03	05/21/03	05/28/03
MERCURY, TOTAL	001	S	03C0122	05/14/03	05/21/03	05/22/03
LEAD, TOTAL	001	S	03L0278	05/14/03	05/21/03	05/28/03
SELENIUM, TOTAL	001	S	03L0278	05/14/03	05/21/03	05/28/03

J00NN7

SILVER, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
SILVER, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
SILVER, TOTAL	002 MS	S	03L0278	05/14/03	05/21/03	05/28/03
ARSENIC, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
ARSENIC, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
ARSENIC, TOTAL	002 MS	S	03L0278	05/14/03	05/21/03	05/28/03
BARIUM, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
BARIUM, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
BARIUM, TOTAL	002 MS	S	03L0278	05/14/03	05/21/03	05/28/03
CADMIUM, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
CADMIUM, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
CADMIUM, TOTAL	002 MS	S	03L0278	05/14/03	05/21/03	05/28/03
CHROMIUM, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
CHROMIUM, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
CHROMIUM, TOTAL	002 MS	S	03L0278	05/14/03	05/21/03	05/28/03
MERCURY, TOTAL	002	S	03C0122	05/14/03	05/21/03	05/22/03
MERCURY, TOTAL	002 REP	S	03C0122	05/14/03	05/21/03	05/22/03
MERCURY, TOTAL	002 MS	S	03C0122	05/14/03	05/21/03	05/22/03
LEAD, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
LEAD, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
LEAD, TOTAL	002 MS	S	03L0278	05/14/03	05/21/03	05/28/03
SELENIUM, TOTAL	002	S	03L0278	05/14/03	05/21/03	05/28/03
SELENIUM, TOTAL	002 REP	S	03L0278	05/14/03	05/21/03	05/28/03
SELENIUM, TOTAL	002 MS	S	03L0278	05/14/03	05/21/03	05/28/03

Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD B03-015 H2224

DATE RECEIVED: 05/17/03

LVL LOT # :0305L450

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
---------------------	-------	-----	--------	------------	-----------	----------

J00NN8

SILVER, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/03
ARSENIC, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/03
BARIUM, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/03
CADMIUM, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/03
CHROMIUM, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/03
MERCURY, TOTAL	003	S	03C0122	05/14/03	05/21/03	05/22/03
LEAD, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/03
SELENIUM, TOTAL	003	S	03L0278	05/14/03	05/21/03	05/28/03

J00NN9

SILVER, TOTAL	004	S	03L0278	05/15/03	05/21/03	05/28/03
ARSENIC, TOTAL	004	S	03L0278	05/15/03	05/21/03	05/28/03
BARIUM, TOTAL	004	S	03L0278	05/15/03	05/21/03	05/28/03
CADMIUM, TOTAL	004	S	03L0278	05/15/03	05/21/03	05/28/03
CHROMIUM, TOTAL	004	S	03L0278	05/15/03	05/21/03	05/28/03
MERCURY, TOTAL	004	S	03C0122	05/15/03	05/21/03	05/22/03
LEAD, TOTAL	004	S	03L0278	05/15/03	05/21/03	05/28/03
SELENIUM, TOTAL	004	S	03L0278	05/15/03	05/21/03	05/28/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0278	N/A	05/21/03	05/28/03
SILVER, TOTAL	MB1	S	03L0278	N/A	05/21/03	05/28/03
ARSENIC LABORATORY	LC1 BS	S	03L0278	N/A	05/21/03	05/28/03
ARSENIC, TOTAL	MB1	S	03L0278	N/A	05/21/03	05/28/03
BARIUM LABORATORY	LC1 BS	S	03L0278	N/A	05/21/03	05/28/03
BARIUM, TOTAL	MB1	S	03L0278	N/A	05/21/03	05/28/03
CADMIUM LABORATORY	LC1 BS	S	03L0278	N/A	05/21/03	05/28/03
CADMIUM, TOTAL	MB1	S	03L0278	N/A	05/21/03	05/28/03
CHROMIUM LABORATORY	LC1 BS	S	03L0278	N/A	05/21/03	05/28/03
CHROMIUM, TOTAL	MB1	S	03L0278	N/A	05/21/03	05/28/03
MERCURY LABORATORY	LC1 BS	S	03C0122	N/A	05/21/03	05/22/03
MERCURY, TOTAL	MB1	S	03C0122	N/A	05/21/03	05/22/03
LEAD LABORATORY	LC1 BS	S	03L0278	N/A	05/21/03	05/28/03

Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD B03-015 H2224

DATE RECEIVED: 05/17/03

LVL LOT # :0305L450

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	MB1	S	03L0278	N/A	05/21/03	05/28/03
SELENIUM LABORATORY	LC1 BS	S	03L0278	N/A	05/21/03	05/28/03
SELENIUM, TOTAL	MB1	S	03L0278	N/A	05/21/03	05/28/03



## Analytical Report

**Client:** TNU-HANFORD B03-015

**LVL#:** 0305L450

**SDG/SAF#:** H2224/B03-015

**W.O.#:** 11343-606-001-9999-00

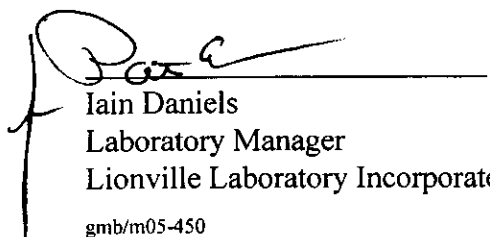
**Date Received:** 05-17-03

### METALS CASE NARRATIVE

1. This narrative covers the analysis of 1 solid sample.
2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary.  
  
This is a relog of LVL batch# 0305L432-004, -005, -006, -008.
3. All analyses were performed within the required holding times.
4. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.
11. The duplicate analysis for 1 analyte was outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
13. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated  
gmb/m05-450

05-30-02  
Date



# METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this

Lot#: 03.52450

Leaching Procedure: 1310 1311 1312 Other: \_\_\_\_\_

CLP Metals    Digestion and    Analysis Methods: ILM03.0 ILM04.0

Metals Digestion Methods: 3005A 3010A 3015 3020A 3050B 3051 200.7 SS17  
Other: \_\_\_\_\_

## Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Antimony	<u>6010B</u> <u>7041</u> <sup>5</sup>	<u>200.7</u> <u>204.2</u>			<u>99</u>
Arsenic	<u>6010B</u> <u>7060A</u> <sup>5</sup>	<u>200.7</u> <u>206.2</u>	<u>3113B</u>		<u>99</u>
Barium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Beryllium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Bismuth	<u>6010B</u> <sup>1</sup>	<u>200.7</u> <sup>1</sup>		<u>1620</u>	<u>99</u>
Boron	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Cadmium	<u>6010B</u> <u>7131A</u> <sup>5</sup>	<u>200.7</u> <u>213.2</u>			<u>99</u>
Calcium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Chromium	<u>6010B</u> <u>7191</u> <sup>5</sup>	<u>200.7</u> <u>218.2</u>			<u>SS17</u>
Cobalt	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Copper	<u>6010B</u> <u>7211</u> <sup>5</sup>	<u>200.7</u> <u>220.2</u>			<u>99</u>
Iron	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Lead	<u>6010B</u> <u>7421</u> <sup>5</sup>	<u>200.7</u> <u>239.2</u>	<u>3113B</u>		<u>99</u>
Lithium	<u>6010B</u> <u>7430</u> <sup>4</sup>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Magnesium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Manganese	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Mercury	<u>7470A</u> <sup>3</sup> <u>7471A</u> <sup>3</sup>	<u>245.1</u> <sup>2</sup> <u>245.5</u> <sup>2</sup>			<u>99</u>
Molybdenum	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Nickel	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Potassium	<u>6010B</u> <u>7610</u> <sup>4</sup>	<u>200.7</u> <u>258.1</u> <sup>4</sup>			<u>99</u>
Rare Earths	<u>6010B</u> <sup>1</sup>	<u>200.7</u> <sup>1</sup>		<u>1620</u>	<u>99</u>
Selenium	<u>6010B</u> <u>7740</u> <sup>5</sup>	<u>200.7</u> <u>270.2</u>	<u>3113B</u>		<u>99</u>
Silicon	<u>6010B</u> <sup>1</sup>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silica	<u>6010B</u>	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silver	<u>6010B</u> <u>7761</u> <sup>5</sup>	<u>200.7</u> <u>272.2</u>			<u>99</u>
Sodium	<u>6010B</u> <u>7770</u> <sup>4</sup>	<u>200.7</u> <u>273.1</u> <sup>4</sup>			<u>99</u>
Strontium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Thallium	<u>6010B</u> <u>7841</u> <sup>5</sup>	<u>200.7</u> <u>279.2</u> <u>200.9</u>			<u>99</u>
Tin	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Titanium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Uranium	<u>6010B</u> <sup>1</sup>	<u>200.7</u> <sup>1</sup>		<u>1620</u>	<u>99</u>
Vanadium	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Zinc	<u>6010B</u>	<u>200.7</u>			<u>99</u>
Zirconium	<u>6010B</u> <sup>1</sup>	<u>200.7</u> <sup>1</sup>		<u>1620</u>	<u>99</u>

Other: \_\_\_\_\_

Method: \_\_\_\_\_

# METHOD REFERENCES AND DATA QUALIFIERS

## DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

\* = Indicates that the original sample result is greater than 4x the spike amount added.

## ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LCS = Laboratory Control Sample.

NC = Not calculated.

## ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Flame AA.
4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/29/03

CLIENT: TNUHANFORD B03-015 H2224  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L450

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING	DILUTION
					LIMIT	FACTOR
*****	*****	*****	*****	*****	*****	*****
-001	J00NP0	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	0.31 u	MG/KG	0.31	1.0
		Barium, Total	1.2	MG/KG	0.02	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.28	MG/KG	0.09	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	0.56	MG/KG	0.21	1.0
		Selenium, Total	0.39 u	MG/KG	0.39	1.0
-002	J00NN7	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.3	MG/KG	0.33	1.0
		Barium, Total	83.2	MG/KG	0.02	1.0
		Cadmium, Total	0.10	MG/KG	0.04	1.0
		Chromium, Total	12.3	MG/KG	0.1	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	4.4	MG/KG	0.23	1.0
		Selenium, Total	0.41 u	MG/KG	0.41	1.0
-003	J00NN8	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.8	MG/KG	0.33	1.0
		Barium, Total	81.8	MG/KG	0.02	1.0
		Cadmium, Total	0.1	MG/KG	0.04	1.0
		Chromium, Total	13.0	MG/KG	0.10	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	4.6	MG/KG	0.23	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
-004	J00NN9	Silver, Total	0.13 u	MG/KG	0.13	1.0
		Arsenic, Total	3.0	MG/KG	0.36	1.0
		Barium, Total	98.1	MG/KG	0.02	1.0
		Cadmium, Total	0.12	MG/KG	0.04	1.0
		Chromium, Total	14.6	MG/KG	0.11	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	4.5	MG/KG	0.25	1.0
		Selenium, Total	0.46 u	MG/KG	0.46	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/29/03

CLIENT: TNUHANFORD B03-015 H2224  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L450

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK1	03L0278-MB1	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Barium, Total	0.05	MG/KG	0.02	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.20	MG/KG	0.10	1.0
		Lead, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
BLANK1	03C0122-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/29/03

CLIENT: TNUHANFORD B03-015 H2224

LVL LOT #: 0305L450

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
=====	=====	=====	=====	=====	=====	=====	=====
-002	J00NN7	Silver, Total	4.6	0.12u	5.0	92.0	1.0
		Arsenic, Total	183	2.3	199	91.1	1.0
		Barium, Total	265	83.2	199	91.5	1.0
		Cadmium, Total	4.7	0.10	5.0	92.0	1.0
		Chromium, Total	30.9	12.3	19.9	93.5	1.0
		Mercury, Total	0.17	0.02u	0.15	109.8	1.0
		Lead, Total	49.8	4.4	49.7	91.3	1.0
		Selenium, Total	174	0.41u	199	87.5	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/29/03

CLIENT: TNUHANFORD B03-015 H2224  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L450

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
=====	=====	=====	=====	=====	=====	=====
-002REP	J00NN7	Silver, Total	0.12u	0.12u	NC	1.0
		Arsenic, Total	2.3	2.6	12.2	1.0
		Barium, Total	83.2	80.0	3.9	1.0
		Cadmium, Total	0.10	0.14	34.0	1.0
		Chromium, Total	12.3	13.0	5.5	1.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Lead, Total	4.4	4.0	9.5	1.0
		Selenium, Total	0.41u	0.42u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/29/03

CLIENT: TNUHANFORD B03-015 H2224

LVL LOT #: 0305L450

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SAMPLE	SPIKED AMOUNT	SPIKED UNITS	%RECOV
*****	*****	*****	*****	*****	*****	*****
LCS1	03L0278-LC1	Silver, LCS	49.1	50.0	MG/KG	98.2
		Arsenic, LCS	909	1000	MG/KG	90.9
		Barium, LCS	487	500	MG/KG	97.3
		Cadmium, LCS	24.2	25.0	MG/KG	96.8
		Chromium, LCS	50.7	50.0	MG/KG	101.4
		Lead, LCS	239	250	MG/KG	95.6
		Selenium, LCS	852	1000	MG/KG	85.2
LCS1	03C0122-LC1	Mercury, LCS	6.8	6.2	MG/KG	109.8



A B D C

[illegible]

Lionville Laboratory Use Only	
Samples were:	Tamper Resistant Seal was
1) Shipped _____ or	1) Present on Outer
Hand Delivered _____	Package Y or N
Airbill # _____	2) Unbroken on Outer
_____	Package Y or N
2) Ambient or Chilled	3) Present on Sample
3) Received In Good	Y or N
Condition Y or N	4) Unbroken on
4) Samples	Sample Y or N
Properly Preserved	COC Record Present
Y or N	Upon Sample Rec't
5) Received Within	Y or N
Holding Times	Cooler
Y or N	Temp. _____ °C



# LIONVILLE LABORATORY INCORPORATED

## SAMPLE RECEIPT CHECKLIST

IENT: TNU Hamford

chase Order/Project:

DATE: 5.17.03

F# / SOW# / Release #: B03-015

boratory SDG #:

0305L432

**NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION**

- |  |   |                             |   |  |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)   | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc?  | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date)   | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 99055 / 0.8°

ERC 96039 / 0.3°

Laboratory Sample Custodian:

*[Signature]*

Laboratory Project Manager:

Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNUHANFORD B03-015 H2224



DATE RECEIVED: 05/17/03

LVL LOT # :0305L450

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00NP0						
% SOLIDS	001	S	03L*S068	05/14/03	05/20/03	05/21/03
J00NN7						
% SOLIDS	002	S	03L*S068	05/14/03	05/20/03	05/21/03
J00NN8						
% SOLIDS	003	S	03L*S068	05/14/03	05/20/03	05/21/03
J00NN9						
% SOLIDS	004	S	03L*S068	05/15/03	05/20/03	05/21/03
PETROLEUM HYDROCARBO	004	S	03LHC029	05/15/03	05/28/03	05/29/03
PETROLEUM HYDROCARBO	004 MS	S	03LHC026	05/15/03	05/23/03	05/27/03
PETROLEUM HYDROCARBO	004 MSD	S	03LHC026	05/15/03	05/23/03	05/27/03

LAB QC:

PETROLEUM HYDROCARBO	LC1 BS	S	03LHC029	N/A	05/28/03	05/29/03
PETROLEUM HYDROCARBO	MB1	S	03LHC029	N/A	05/28/03	05/29/03
PETROLEUM HYDROCARBO	LC1 BS	S	03LHC026	N/A	05/23/03	05/27/03
PETROLEUM HYDROCARBO	MB1	S	03LHC026	N/A	05/23/03	05/27/03




## Analytical Report

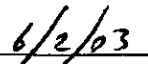
**Client:** TNU-HANFORD B03-015 H2224  
**LVL#:** 0305L450

**W.O.#:** 11343-606-001-9999-00  
**Date Received:** 05-17-03

### INORGANIC NARRATIVE

1. This narrative covers the analyses of 4 soil samples.
2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.
3. Sample holding times as required by the method and/or contract were met.
4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.
5. The method blank (MB) 03LHC029-MB1 for Petroleum Hydrocarbons (PHC) was within the method criteria however MB 03LHC026-MB1 was above the reporting limit.
6. The Laboratory Control Samples (LCS) for PHC were within the laboratory control limits.
7. The matrix spike recoveries for PHC were within the 75-125% control limits. The matrix spike duplicate was within the 20% Relative Percent Difference (RPD) control limit.
8. Results for solid samples are reported on a dry weight basis.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

  
Date

njplu05-450

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 16 pages.

# Lionville Laboratory Incorporated

## WET CHEMISTRY

### METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% Ash	— D2216-80		
% Moisture	— D2216-80		— ILMO4.0 (e)
% Solids	✓ — D2216-80		— ILMO4.0 (e)
% Volatile Solids	— D2216-80		
ASTM Extraction in Water	— D3987-81/85		
BTU	— D240-87		
CEC		— 9081	— c
Chromium VI		— 3060A/7196A	
Corrosivity — by coupon — by pH		— 1110(mod) — 9045C	
Cyanide, Total		— 9010B	— ILMO4.0 (e)
Cyanide, Reactive		— Section 7.3/9014	
Halides, Extractable Organic		— 9020B	— EPA 600/4/84-008
Halides, Total		— 9020B	— EPA 600/4/84-008
EP Toxicity		— 1310A	
Flash Point		— 1010	
Ignitability		— 1010	
Oil & Grease		— 9071A	
Carbon, Total Organic		— 9060	— Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions — D240-87(mod)		— 5050	
Petroleum Hydrocarbons, Total Recoverable		✓ — 9071	✓ — EPA 418.1
pH, Soil		— 9045C	
Sulfide, Reactive		— Section 7.3/9030B	
Sulfide		— 9030B(mod)	
Specific Gravity	— D1429-76C/	— D5057-90	
Sulfur, Total		— 9056	
Synthetic Preparation Leach		— 1312	
Paint Filter		— 9095A	

Other:

Method:

Other:

Method

## Lionville Laboratory Incorporated

### METHOD REFERENCES AND DATA QUALIFIERS

#### DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

\* = Indicates that the original sample result is greater than 4x the spike amount added.

#### ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

#### ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
  - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
  - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
  - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
  - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
  - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
  - f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2224  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L450

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-001	J00NP0	% Solids	100	%	0.01	1.0
-002	J00NN7	% Solids	95.8	%	0.01	1.0
-003	J00NN8	% Solids	95.6	%	0.01	1.0
-004	J00NN9	% Solids	87.9	%	0.01	1.0
		Petroleum Hydrocarbons	7.6	MG/KG	3.8	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/30/03

CLIENT: TNUHANFORD B03-015 H2224  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L450

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	03LHC029-MB1	Petroleum Hydrocarbons	3.3	u MG/KG	3.3	1.0
BLANK10	03LHC026-MB1	Petroleum Hydrocarbons	4.6	MG/KG	3.3	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2224  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L450

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
*****	*****	*****	*****	*****	*****	*****	*****
-004	J00NN9	Petroleum Hydrocarbons	360	7.6	369	95.4	1.0
		Petroleum Hydrocarbons	343	7.6	367	91.6	1.0
LCS10	03LHC029-LC1	Petroleum Hydrocarbons	138	3.3 u	140	98.8	1.0
LCS10	03LHC026-LC1	Petroleum Hydrocarbons	144	3.3 u	140	103.2	1.0



Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 05/30/03

CLIENT: TNUHANFORD B03-015 H2224  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0305L450

SAMPLE	SITE ID	ANALYTE	SPIKE#1	SPIKE#2	%DIFF
			%RECOV	%RECOV	
-----	-----	-----	-----	-----	-----
-004	J00NN9	Petroleum Hydrocarbons	95.4	91.6	4.1

**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

Client <u>TNU-Hanford</u> <u>B03-015</u>				Refrigerator # <u>2</u>											
Est. Final Proj. Sampling Date				#/Type Container											
Project # <u>11343-606-001-9999-03</u>				Liquid											
Project Contact/Phone #				Solid											
Lionville Laboratory Project Manager <u>OS</u>				Volume											
QC <u>SPEC</u> Del <u>STD</u> TAT <u>7 days</u>				Liquid											
				Solid											
Date Rec'd <u>5-17-03</u> Date Due <u>5-24-03</u>				Preservatives											
				ANALYSES REQUESTED →											
				ORGANIC											
				VOA BNA Pest/PCB Herb											
				INORG											
				Metal CN TAT											
				Lionville Laboratory Use Only											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix											
				Date Collected											
				Time Collected											
				MS MSD											
				Matrix</											

0305L450

## Custody Transfer Record/Lab Work Request Page 1 of 1



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TN4-Hanford</u> <u>803-015</u>				Refrigerator # <u>2</u>		A		B		D		G																																																																																																																																																																																																											
Est. Final Proj. Sampling Date _____				#/Type Container		Liquid																																																																																																																																																																																																																	
Project # <u>11343-606-001-9999-00</u>						Solid		<u>1A6</u>		<u>1A6</u>		<u>1A6</u>																																																																																																																																																																																																											
Project Contact/Phone # _____				Volume		Liquid																																																																																																																																																																																																																	
Lionville Laboratory Project Manager <u>05</u>						Solid		<u>120</u>		<u>250</u>		<u>60</u>																																																																																																																																																																																																											
QC <u>SPEC</u> Del <u>STD</u> TAT <u>7 day</u>				Preservatives				<u>-</u>																																																																																																																																																																																																															
Date Rec'd <u>5-17-03</u> Date Due <u>5-24-03</u>				ANALYSES REQUESTED →		ORGANIC				INORG																																																																																																																																																																																																													
						VOA BNA Pes/PCB Herb				Metal NC TAT																																																																																																																																																																																																													
Lionville Laboratory Use Only																																																																																																																																																																																																																							
<table border="1"> <thead> <tr> <th rowspan="2">MATRIX CODES:</th> <th rowspan="2">Lab ID</th> <th rowspan="2">Client ID/Description</th> <th colspan="2">Matrix QC Chosen (✓)</th> <th rowspan="2">Matrix</th> <th rowspan="2">Date Collected</th> <th rowspan="2">Time Collected</th> <th colspan="4">Lionville Laboratory Use Only</th> </tr> <tr> <th>MS</th> <th>MSD</th> <th>0625H</th> <th>0606H</th> <th>0606H</th> <th>0606H</th> <th>MRUATO</th> <th>IPHC</th> </tr> </thead> <tbody> <tr> <td>S - Soil</td> <td>001</td> <td>J00NP0</td> <td></td> <td></td> <td>S</td> <td>5-14-03</td> <td>0830</td> <td>X</td> <td></td> <td></td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>SE - Sediment</td> <td>002</td> <td>J00NN7</td> <td></td> <td></td> <td>I</td> <td>I</td> <td>0900</td> <td>X</td> <td></td> <td></td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>SO - Solid</td> <td>003</td> <td>J00NN8</td> <td></td> <td></td> <td>I</td> <td>I</td> <td>I</td> <td>X</td> <td></td> <td></td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>SL - Sludge</td> <td>004</td> <td>J00NN9</td> <td></td> <td></td> <td>I</td> <td>5-15-03</td> <td>1300</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>W - Water</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>O - Oil</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>A - Air</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DS - Drum Solids</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DL - Drum Liquids</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>L - EP/TCLP Leachate</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>WI - Wipe</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>X - Other</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>F - Fish</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>														MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only				MS	MSD	0625H	0606H	0606H	0606H	MRUATO	IPHC	S - Soil	001	J00NP0			S	5-14-03	0830	X				X		SE - Sediment	002	J00NN7			I	I	0900	X				X		SO - Solid	003	J00NN8			I	I	I	X				X		SL - Sludge	004	J00NN9			I	5-15-03	1300	X	X	X		X		W - Water														O - Oil														A - Air														DS - Drum Solids														DL - Drum Liquids														L - EP/TCLP Leachate														WI - Wipe														X - Other														F - Fish													
MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only																																																																																																																																																																																																															
			MS	MSD				0625H	0606H	0606H	0606H	MRUATO	IPHC																																																																																																																																																																																																										
S - Soil	001	J00NP0			S	5-14-03	0830	X				X																																																																																																																																																																																																											
SE - Sediment	002	J00NN7			I	I	0900	X				X																																																																																																																																																																																																											
SO - Solid	003	J00NN8			I	I	I	X				X																																																																																																																																																																																																											
SL - Sludge	004	J00NN9			I	5-15-03	1300	X	X	X		X																																																																																																																																																																																																											
W - Water																																																																																																																																																																																																																							
O - Oil																																																																																																																																																																																																																							
A - Air																																																																																																																																																																																																																							
DS - Drum Solids																																																																																																																																																																																																																							
DL - Drum Liquids																																																																																																																																																																																																																							
L - EP/TCLP Leachate																																																																																																																																																																																																																							
WI - Wipe																																																																																																																																																																																																																							
X - Other																																																																																																																																																																																																																							
F - Fish																																																																																																																																																																																																																							

Special Instructions:

SAF # 803-015

Run Matrix QC (do not use -001)

Relog of 0305L432-004,-005,-006,-008

DATE/REVISIONS:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Lionville Laboratory Use Only

Samples were:

 1) Shipped \_\_\_\_\_ or  
 Hand Delivered \_\_\_\_\_  
 Airbill # \_\_\_\_\_

 2) Ambient or Chilled  
 3) Received in Good  
 Condition Y or N

 4) Samples  
 Properly Preserved  
 Y or N

 5) Received Within  
 Holding Times  
 Y or N

Tamper Resistant Seal was:

 1) Present on Outer  
 Package Y or N  
 2) Unbroken on Outer  
 Package Y or N

 3) Present on Sample  
 Y or N

 4) Unbroken on  
 Sample Y or N  
 COC Record Present  
 Upon Sample Rec'd  
 Y or N

 Cooler  
 Temp. \_\_\_\_\_ °C

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
Relog							

 Discrepancies Between  
 Samples Labels and  
 COC Record? Y or N  
 NOTES:

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B03-015-103		Page 1 of 1	
Collector Doug Bowers		Company Contact Mike Stankovich		Telephone No. 372-9082		Project Coordinator KESSNER, JH		Price Code 8B Data Turnaround 7 Days	
Project Designation Remaining Sites Confirmation Sampling-Soil		Sampling Location 600-181 oil dump area		SAF No. B03-015		Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 99 055</u>		Field Logbook No. EL-1578		COA C17HXU671C		Method of Shipment Fed Ex			
Shipped To TMA/RECRA		Offsite Property No. <u>A03023.2</u>		Bill of Lading/Air Bill No. <u>SEE OSP.C</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	None	Cool 4C	Cool 4C		
				Type of Container	aG	aG	aG		
				No. of Container(s)	1	1	1		
				Volume	60mL	120mL	60mL		
SAMPLE ANALYSIS				See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 2260A (TCL)			
Sample No.	Matrix *	Sample Date	Sample Time						
J00NP0	SOIL	5-14-03	0830	X	X	X			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <u>Doug Bowers</u> Date/Time <u>5-14-03/1130</u>		Received By/Stored In <u>Ref 3A 3728</u> Date/Time <u>5-14-03/1130</u>		(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7471 - (CV)  <u>Do not use for QA/QC.</u>  Personnel not available to relinquish samples from the 3728 Ref # <u>3A</u> on <u>5/16/03</u>				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W1=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <u>Ref 3A 3728</u> Date/Time <u>5/16/03 1100</u>		Received By/Stored In <u>SSCALEX/SL</u> Date/Time <u>5/16/03 1100</u>							
Relinquished By/Removed From <u>SSCALEX/SL</u> Date/Time <u>5/16/03 1100</u>		Received By/Stored In <u>FED EX</u> Date/Time							
Relinquished By/Removed From <u>QED Ex</u> Date/Time <u>5-17-03 1155</u>		Received By/Stored In <u>JJ/Donch</u> Date/Time <u>5-17-03 1155</u>							
Relinquished By/Removed From		Received By/Stored In							
Relinquished By/Removed From		Received By/Stored In							
LABORATORY SECTION		Received By		Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>					<b>B03-015-102</b>		Page 1 of 1		
Collector Doug Bowers		Company Contact Mike Stankovich		Telephone No. 372-9082		Project Coordinator KESSNER, JH		Price Code <b>8B</b>		Data Turnaround <b>7 Days</b>	
Project Designation Remaining Sites Confirmation Sampling-Soil		Sampling Location 600-181 oil dump area		SAF No. B03-015		Air Quality <input type="checkbox"/>					
Ice Chest No. <b>ERC 99 055</b>		Field Logbook No. EL-1578		COA C17HXU671C		Method of Shipment Fed Ex					
Shipped To <u>TM/RECRA</u>		Offsite Property No. <b>A030232</b>		Bill of Lading/Air Bill No. <b>SEE OPR</b>							
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>   <b>Special Handling and/or Storage</b>				Preservation	None	Cool 4C	Cool 4C	Cool 4C	<b>40C</b>		
				Type of Container	aG	aG	aG	aG	<b>aG</b>		
				No. of Container(s)	1	1	1	1	<b>1</b>		
				Volume	60mL	250mL	120mL	60mL	<b>60mL</b>		
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions	PCBs - 8082, Pesticides - 8081; Chloro-Herbicides - EPA 8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	<b>TPT (+ + + 1) 418.1</b>			
Sample No.	Matrix *	Sample Date	Sample Time								
J00NN7	SOIL	5-14-03	0900	X	X	X					
J00NN8	SOIL	5-14-03	0900	Y	X	X					
J00NN9	SOIL										
<b>CHAIN OF POSSESSION</b>				<b>SPECIAL INSTRUCTIONS</b>				<b>Matrix *</b> S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From <b>Doug Bowers</b> Date/Time <b>5-14-03/1130</b>		Received By/Stored In <b>REF 3A</b> Date/Time <b>5-14-03/1130</b>		(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7471 - (CV)  Personnel not available to relinquish samples from the 3728 Ref # <b>3A</b> on <b>5/16/03</b>							
Relinquished By/Removed From <b>REF 3A</b> Date/Time <b>51603 1100</b>		Received By/Stored In <b>SJGAL</b> Date/Time <b>51603 1100</b>									
Relinquished By/Removed From <b>20ALE</b> Date/Time <b>51603 1100</b>		Received By/Stored In <b>FED EX</b> Date/Time									
Relinquished By/Removed From <b>20EX</b> Date/Time <b>5-17-03 1155</b>		Received By/Stored In <b>20EX</b> Date/Time <b>5-17-03 1155</b>									
Relinquished By/Removed From		Received By/Stored In									
Relinquished By/Removed From		Received By/Stored In									
<b>LABORATORY SECTION</b>		Received By		Title				Date/Time			
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By				Date/Time			

Bechtel Hanford Inc.				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST								B03-015-99			
Collector Fahlberg				Company Contact M Stankovich				Telephone No. 531-7620				Project Coordinator KESSNER, JH		Price Code 8B	Data Turnaround 7 Days
Project Designation Remaining Sites Confirmation Sampling-Soil				Sampling Location 600-139				SAF No. B03-015				Air Quality <input type="checkbox"/>			
Ice Chest No. <u>ERC 96 039</u>				Field Logbook No. EL1577				COA C17HXU671C				Method of Shipment Fed EX			
Shipped To TMA (RECRA)				Offsite Property No. <u>A030231</u>				Bill of Lading/Air Bill No. <u>SEE OSPL</u>							
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> Non-Rad Area, No Activity Report Required  <b>Special Handling and/or Storage</b> <u>cool 4°C</u>				Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
				Type of Container	aG	aG	aG	aG	aG	aG	aG				
				No. of Container(s)	1	1	1	1	1	1	1				
				Volume	60mL	240mL	120mL	60mL	60mL	120mL	120mL				
<b>SAMPLE ANALYSIS</b>				See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	TPH (Total) - 418.1	Sulfides - 9030	Total Cyanide - 9010					
Sample No.	Matrix *	Sample Date	Sample Time												
J00NK9	SOIL	5-15-03	1200	X	X	X		X	X	X					
<b>CHAIN OF POSSESSION</b>				<b>Sign/Print Names</b>				<b>SPECIAL INSTRUCTIONS</b>							
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time		(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7471 - (CV)   Personnel not available to relinquish samples from the 3728 Ref # <u>3A</u> on <u>5/16/03</u>								
<u>R. F. Fahlberg</u>		<u>5-15-03</u>	<u>3A</u>		<u>5-15-03</u>										
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time										
<u>REF 3A</u>		<u>51603 1100</u>	<u>SJGALE</u>		<u>51603 1100</u>										
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time										
<u>SJGALE</u>		<u>51603 1100</u>	<u>FED EX</u>												
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time										
<u>DOER</u>		<u>5-17-03 1155</u>	<u>J. J. J. J.</u>		<u>5-17-03 1155</u>										
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time										
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time										
<b>LABORATORY SECTION</b>		Received By		Title		Date/Time									
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method		Disposed By		Date/Time									

<b>Bechtel Hanford Inc.</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>						<b>B03-015-102</b>		Page 1 of 1	
Collector Doug Bowers		Company Contact Mike Stankovich		Telephone No. 372-9082		Project Coordinator KESSNER, JH		Price Code <b>8B</b>		Data Turnaround <b>7 Days</b>	
Project Designation Remaining Sites Confirmation Sampling-Soil		Sampling Location 600-181 oil dump area		SAF No. B03-015		Air Quality <input type="checkbox"/>					
Ice Chest No. <b>ERC 99 055</b>		Field Logbook No. EL-1578		COA C17HXU671C		Method of Shipment Fed Ex					
Shipped To TM/RECRA		Offsite Property No. <b>A030 232</b>				Bill of Lading/Air Bill No. <b>58E007C</b>					
POSSIBLE SAMPLE HAZARDS/REMARKS  Special Handling and/or Storage				Preservation	None	Cool 4C	Cool 4C	Cool 4C	<b>4°C</b>		
				Type of Container	aG	aG	aG	aG	<b>aG</b>		
				No. of Container(s)	1	1	1	1	<b>1</b>		
				Volume	60mL	250mL	120mL	60mL	<b>60mL</b>		
SAMPLE ANALYSIS				See item (1) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	<b>TPH total 418.1</b>			
Sample No.	Matrix *	Sample Date	Sample Time								
J00NN7 <b>8-19</b>	SOIL										
J00NN8 <b>5-14-03</b>	SOIL										
J00NN9	SOIL	<b>5-17-03</b>	<b>1300</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>				
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From <b>Doug Bowers</b>		Date/Time <b>5-15-03/1430</b>		Received By/Stored In <b>R.F. 3A</b>		Date/Time <b>5-15-03/1430</b>		(1) ICP Metals - 6010TR (Client List) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury - 7471 - (CV)  Personnel not available to relinquish samples from the 3728 Ref # <b>2A</b> on <b>5/16/03</b>			
Relinquished By/Removed From <b>REF 3A</b>		Date/Time <b>51603 1100</b>		Received By/Stored In <b>SJ GALE</b>		Date/Time <b>51603 1100</b>					
Relinquished By/Removed From <b>SJ GALE</b>		Date/Time <b>51603 1100</b>		Received By/Stored In <b>FED EX</b>		Date/Time					
Relinquished By/Removed From <b>Doug Bowers</b>		Date/Time <b>51703 1155</b>		Received By/Stored In <b>Doug Bowers</b>		Date/Time <b>51703 1155</b>					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time					
LABORATORY SECTION		Received By		Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time			





# LIONVILLE LABORATORY INCORPORATED

## SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hartford

Purchase Order/Project:

DATE: 5-17-03

AF# / SOW# / Release #: B03-015

Laboratory SDG #:

0305L432 and 0305L450 *ref 5-22-03*

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

- |  |   |                             |   |  |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 4. All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)   | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LVL1 Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc?  | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date)   | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

ERC 99055 / 0.8°-

ERC 96039 / 0.3°

Laboratory Sample Custodian:

Laboratory Project Manager:

*[Signature]*